

## **RAW SEQUENCE LISTING**

**The Biotechnology Systems Branch of the Scientific and Technical  
Information Center (STIC) no errors detected.**

Application Serial Number: 10/626,115

Source: \_\_\_\_\_

Date Processed by STIC: \_\_\_\_\_

# ***ENTERED***



IFWO

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/626,115

DATE: 10/18/2004

TIME: 09:56:48

Input Set : N:\CrF3\RULE60\10626115.raw.txt

Output Set: N:\CRF4\10182004\J626115.raw

```

1 <110> APPLICANT: AquaBio Product Sciences, LLC
2   Harris, H. William, Jr.
3   Russell, David R.
4   Nearing, Jacqueline
5   Betka, Marlies
6 <120> TITLE OF INVENTION: Methods for Raising Pre-Adult Anadromous
7   Fish
8 <130> FILE REFERENCE: 2213.1004-000
9 <140> CURRENT APPLICATION NUMBER: US/10/626,115
10 <141> CURRENT FILING DATE: 2003-07-24
11 <150> PRIOR APPLICATION NUMBER: US/10/270,876
12 <151> PRIOR FILING DATE: 2002-10-12
13 <150> PRIOR APPLICATION NUMBER: US/09/687,477
14 <151> PRIOR FILING DATE: 2000-10-12
15 <160> NUMBER OF SEQ ID NOS: 23
16 <170> SOFTWARE: FastSEQ for Windows Version 4.0
18 <210> SEQ ID NO: 1
19 <211> LENGTH: 594
20 <212> TYPE: DNA
21 <213> ORGANISM: Atlantic Salmon
22 <400> SEQUENCE: 1
23   cttggcatta tgctctgtgc tgggggtatt cttgacagca ttcgtgatgg gagtgtttat 60
24   caaatttcgc aacaccccaa ttgttaaggc cacaaacaga gagctatcct acctcctcct 120
25   gttctcactc atctgtgttt tctccagttc cctcatcttc attgggtgaac cccaggactg 180
26   gacatgccgt ctacgccagc ctgcattcgg gataagtttt gttctctgca tctcctgcat 240
27   cctggtaaaa actaaccgag tacttctagt gttcgaagcc aagatcccca ccagtctcca 300
28   tcgtaagtgg tgggggctaa acttgacagtt cctgttagtg ttctgttcca catttgtgca 360
29   agtcatgata tgtgtgggtct ggctttacaa tgctcctccg gcgagctaca ggaaccatga 420
30   cattgatgag ataattttca ttacatgcaa tgagggctct atgatggcgc ttggcttcct 480
31   aattgggtac acatgcctgc tggcagccat atretttctt tttgcattta aatcacgaaa 540
32   actgccagag aactttactg aggctaagtt catcaccttc agcatgctca tctt      594
34 <210> SEQ ID NO: 2
35 <211> LENGTH: 199
36 <212> TYPE: PRT
37 <213> ORGANISM: Atlantic Salmon
38 <220> FEATURE:
39 <223> OTHER INFORMATION: Xaa=any amino acid
40 <400> SEQUENCE: 2
41   Leu Ala Leu Cys Ser Val Leu Gly Val Phe Leu Thr Ala Phe Val Met
42   1           5           10           15
43   Gly Val Phe Ile Lys Phe Arg Asn Thr Pro Ile Val Lys Ala Thr Asn
44   20           25           30
45   Arg Glu Leu Ser Tyr Leu Leu Leu Phe Ser Leu Ile Cys Cys Phe Ser

```

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Input Set : N:\Crf3\RULE60\10626115.raw.txt

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```

46          35          40          45
47      Ser Ser Leu Ile Phe Ile Gly Glu Pro Gln Asp Trp Thr Cys Arg Leu
48          50          55          60
49      Arg Gln Pro Ala Phe Gly Ile Ser Phe Val Leu Cys Ile Ser Cys Ile
50      65          70          75          80
51      Leu Val Lys Thr Asn Arg Val Leu Leu Val Phe Glu Ala Lys Ile Pro
52          85          90          95
53      Thr Ser Leu His Arg Lys Trp Trp Gly Leu Asn Leu Gln Phe Leu Leu
54          100          105          110
55      Val Phe Leu Phe Thr Phe Val Gln Val Met Ile Cys Val Val Trp Leu
56          115          120          125
W--> 57      Tyr Asn Ala Pro Pro Ala Ser Tyr Arg Asn His Asp Ile Xaa Asp Glu
58          130          135          140
59      Ile Ile Phe Ile Thr Cys Asn Glu Gly Ser Met Met Ala Leu Gly Phe
60      145          150          155          160
61      Leu Ile Gly Tyr Thr Cys Leu Leu Ala Ala Ile Xaa Phe Phe Phe Ala
62          165          170          175
63      Phe Lys Ser Arg Lys Leu Pro Glu Asn Phe Thr Glu Ala Lys Phe Ile
64          180          185          190
65      Thr Phe Ser Met Leu Ile Phe
66          195
68 <210> SEQ ID NO: 3
69 <211> LENGTH: 594
70 <212> TYPE: DNA
71 <213> ORGANISM: Arctic Char
72 <400> SEQUENCE: 3
73      cttggcatta tgctctgtgc tgggggtatt cttgacagca ttctgtgatgg gagtgtttat 60
74      cagatttcgc aacaccccaa ttgttaaggc cacaaacaga gagctatcct acctcctcct 120
75      gttctcactc atctgctgtt tctccagctc cctcatcttc attgggtgaac cccaggactg 180
76      gacatgccgt ctacgccagc ctgcattcgg gataagtttt gttctctgca tctcctgcat 240
77      cctggtcaaa actaaccgag tacttctagt gttcgaagcc aagatcccca ccagtctcca 300
78      tcgtaagtgg tgggggctaa acttgcaagt cctgttggtg ttctgtttca catttggtgca 360
79      agtgatgata tgtgtggtct ggctttacaa tgctcctccg gcgagctaca ggaaccatga 420
80      cattgatgag ataattttca ttacatgcaa tgagggctct atgatggcgc tcggcttctc 480
81      aattgggtac acatgcctgc tggcagccat atgcttcttc tttgcattta aatcacgaaa 540
82      actgccagag aactttaccg aggctaagtt catcaccttc agcatgctca tctt 594
84 <210> SEQ ID NO: 4
85 <211> LENGTH: 199
86 <212> TYPE: PRT
87 <213> ORGANISM: Arctic Char
88 <220> FEATURE:
89 <223> OTHER INFORMATION: Xaa = Any amino acid
90 <400> SEQUENCE: 4
91      Leu Ala Leu Cys Ser Val Leu Gly Val Phe Leu Thr Ala Phe Val Met
92      1          5          10          15
93      Gly Val Phe Ile Arg Phe Arg Asn Thr Pro Ile Val Lys Ala Thr Asn
94          20          25          30
95      Arg Glu Leu Ser Tyr Leu Leu Leu Phe Ser Leu Ile Cys Cys Phe Ser
96          35          40          45

```

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Input Set : N:\Crif3\RULE60\10626115.raw.txt

Output Set: N:\CRF4\10182004\J626115.raw

```

97 Ser Ser Leu Ile Phe Ile Gly Glu Pro Gln Asp Trp Thr Cys Arg Leu
98 50 55 60
99 Arg Gln Pro Ala Phe Gly Ile Ser Phe Val Leu Cys Ile Ser Cys Ile
100 65 70 75 80
101 Leu Val Lys Thr Asn Arg Val Leu Leu Val Phe Glu Ala Lys Ile Pro
102 85 90 95
103 Thr Ser Leu His Arg Lys Trp Trp Gly Leu Asn Leu Gln Phe Leu Leu
104 100 105 110
105 Val Phe Leu Phe Thr Phe Val Gln Val Met Ile Cys Val Val Trp Leu
106 115 120 125
W--> 107 Tyr Asn Ala Pro Pro Ala Ser Tyr Arg Asn His Asp Ile Xaa Asp Glu
108 130 135 140
109 Ile Ile Phe Ile Thr Cys Asn Glu Gly Ser Met Met Ala Leu Gly Phe
110 145 150 155 160
111 Leu Ile Gly Tyr Thr Cys Leu Leu Ala Ala Ile Cys Phe Phe Phe Ala
112 165 170 175
113 Phe Lys Ser Arg Lys Leu Pro Glu Asn Phe Thr Glu Ala Lys Phe Ile
114 180 185 190
115 Thr Phe Ser Met Leu Ile Phe
116 195
118 <210> SEQ ID NO: 5
119 <211> LENGTH: 593
120 <212> TYPE: DNA
121 <213> ORGANISM: Trout
122 <400> SEQUENCE: 5
123 ttggcattat gctctgtgct ggggggtattc ttgacagtat tcgtgatggg agtggtttatc 60
124 agatttcgca acacccaat tgtaaggcc acaaacagag agctatccta cctcctcctg 120
125 ttctcactta tctgtgtgtt ctccagctcc ctcatcttca ttggtgaacc ccaggactgg 180
126 acatgccgctc tacgccagcc tgcattcggg ataagttttg ttctctgcat ctctgcatc 240
127 ctgggtcaaaa ctaaccgagt acttctagtg ttggaagcaa agatccccac cagtctccat 300
128 cgtaagtggg gggggctaaa cttgcagttc ctgttggtgt tcctgttcac atttggtgcaa 360
129 gtgatgatat gtgtggtctg gctttacaat gctcctccgg cgagctacag gaaccatgac 420
130 attgatgaga tcattttcat tacatgcaat gagggctcta tgatggcgct tggcttccta 480
131 attgggtaca catgcctgct ggcagccata tgcttcttct ttgcatttaa atcacgaaaa 540
132 ctgccagaga attttaccga ggctaagttc atcaccttca gcattgctcat ctt 593
134 <210> SEQ ID NO: 6
135 <211> LENGTH: 199
136 <212> TYPE: PRT
137 <213> ORGANISM: Trout
138 <220> FEATURE:
139 <223> OTHER INFORMATION: Xaa = Any amino acid
140 <400> SEQUENCE: 6
141 Leu Ala Leu Cys Ser Val Leu Gly Val Phe Leu Thr Val Phe Val Met
142 1 5 10 15
143 Gly Val Phe Ile Arg Phe Arg Asn Thr Pro Ile Val Lys Ala Thr Asn
144 20 25 30
145 Arg Glu Leu Ser Tyr Leu Leu Leu Phe Ser Leu Ile Cys Cys Phe Ser
146 35 40 45
147 Ser Ser Leu Ile Phe Ile Gly Glu Pro Gln Asp Trp Thr Cys Arg Leu

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## RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/626,115

DATE: 10/18/2004

TIME: 09:56:48

Input Set : N:\CrF3\RULE60\10626115.raw.txt

Output Set: N:\CRF4\10182004\J626115.raw

```

148          50          55          60
149 Arg Gln Pro Ala Phe Gly Ile Ser Phe Val Leu Cys Ile Ser Cys Ile
150 65          70          75          80
151 Leu Val Lys Thr Asn Arg Val Leu Leu Val Phe Glu Ala Lys Ile Pro
152          85          90          95
153 Thr Ser Leu His Arg Lys Trp Trp Gly Leu Asn Leu Gln Phe Leu Leu
154          100          105          110
155 Val Phe Leu Phe Thr Phe Val Gln Val Met Ile Cys Val Val Trp Leu
156          115          120          125
W--> 157 Tyr Asn Ala Pro Pro Ala Ser Tyr Arg Asn His Asp Ile Xaa Asp Glu
158          130          135          140
159 Ile Ile Phe Ile Thr Cys Asn Glu Gly Ser Met Met Ala Leu Gly Phe
160          145          150          155          160
161 Leu Ile Gly Tyr Thr Cys Leu Leu Ala Ala Ile Cys Phe Phe Phe Ala
162          165          170          175
163 Phe Lys Ser Arg Lys Leu Pro Glu Asn Phe Thr Glu Ala Lys Phe Ile
164          180          185          190
165 Thr Phe Ser Met Leu Ile Phe
166          195
168 <210> SEQ ID NO: 7
169 <211> LENGTH: 594
170 <212> TYPE: DNA
171 <213> ORGANISM: Chum Salmon
172 <400> SEQUENCE: 7
173 cttggcatta tgctctgtgc tgggggtatt cttgacagca ttcgtgatgg gagtgtttat 60
174 cagatttcgc aacaccccaa ttgttaaggc cacaacacaga gagctatcct acctcctcct 120
175 gttctcactt atctgtctgtt ttccagctc cctcatcttc attggtgaac cccaggactg 180
176 gacatgccgt ctacgccagc ctgcattcgg gataagtgtt gttctctgca tctcctgcat 240
177 cctgggtcaaa actaaccgag tactttctagt gttcgaagca aagatcccca ccagtctcca 300
178 tcgtaagtgg tgggggctaa acttgcagtt cctggttggtg ttcctgttca catttggtgca 360
179 agtgatgata tgtgtggtct ggctttacaa tgctcctccg gcgagctaca ggaaccatga 420
180 cattgatgag atcattttca ttacatgcaa tgagggtctct atgatggcgc ttggttctct 480
181 aattgggtac acatgcctgc tggcagccat atgcttcttc tttgcattta aatcacgaaa 540
182 actgccagag aattttaccg aggctaagtt catcaccttc agcatgctca tctt 594
184 <210> SEQ ID NO: 8
185 <211> LENGTH: 197
186 <212> TYPE: PRT
187 <213> ORGANISM: Chum Salmon
188 <400> SEQUENCE: 8
189 Leu Ala Leu Cys Ser Val Leu Gly Val Phe Leu Thr Ala Phe Val Met
190 1          5          10          15
191 Gly Val Phe Ile Arg Phe Arg Asn Thr Pro Ile Val Lys Ala Thr Asn
192          20          25          30
193 Arg Glu Leu Ser Tyr Leu Leu Leu Phe Ser Leu Ile Cys Cys Phe Ser
194          35          40          45
195 Ser Ser Leu Ile Phe Ile Gly Glu Pro Gln Asp Trp Thr Cys Arg Leu
196          50          55          60
197 Arg Gln Pro Ala Phe Gly Ile Ser Phe Val Leu Cys Ile Ser Cys Ile
198          65          70          75          80

```

## RAW SEQUENCE LISTING

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DATE: 10/18/2004

TIME: 09:56:48

Input Set : N:\Crif3\RULE60\10626115.raw.txt

Output Set: N:\CRF4\10182004\J626115.raw

```

199      Leu Val Lys Thr Asn Arg Val Leu Leu Val Phe Glu Ala Lys Ile Pro
200              85                      90                      95
201      Thr Ser Leu His Arg Lys Trp Trp Gly Leu Asn Leu Gln Phe Leu Leu
202              100                      105                      110
203      Val Phe Leu Phe Thr Phe Val Gln Val Met Ile Cys Val Val Trp Leu
204              115                      120                      125
205      Tyr Asn Ala Pro Pro Ala Ser Tyr Arg Asn His Asp Ile Asp Glu Ile
206              130                      135                      140
207      Ile Phe Ile Thr Cys Asn Glu Gly Ser Met Met Ala Leu Gly Phe Leu
208              145                      150                      155                      160
209      Ile Gly Tyr Thr Cys Leu Leu Ala Ala Ile Cys Phe Phe Phe Ala Phe
210              165                      170                      175
211      Lys Ser Arg Lys Leu Pro Glu Asn Phe Thr Glu Ala Lys Phe Ile Thr
212              180                      185                      190
213      Phe Ser Met Leu Ile
214              195
216 <210> SEQ ID NO: 9
217 <211> LENGTH: 594
218 <212> TYPE: DNA
219 <213> ORGANISM: Coho Salmon
220 <400> SEQUENCE: 9
221      cttggcatta tgctctgtgc tgggggtatt cttgacagya ttcgtgatgg gagtgtttat 60
222      cagatttcgc aacaccccaa ttgttaaggc cacaaacaga gagctatcct acctcctcct 120
223      gttctcactt atctgctgtt tctccagctc cctcatcttc attggtgaac cccaggactg 180
224      gacatgccgt ctacgccagc ctgcattcgg gataagtttt gttctctgca tctcctgcat 240
225      cctgggtcaaa actaaccgag tacttctagt gttcgaagca aagatcccca ccagtctcca 300
226      tcgtaagtgg tgggggctaa acttgcagtt cctgttggtg ttctgttca catttgtgca 360
227      agtgatgata tgtgtggtct ggctttacaa tgctcctccg gcgagctaca ggaaccatga 420
228      cattgatgag atcattttca ttacatgcaa tgagggtctt atgatggcgc ttggcttcct 480
229      aattgggtac acatgcctgc tggcagccat atgcttcttc tttgcattta aatcacgaaa 540
230      actgccagag aattttacmg aggctaagtt catcaccttc agcatgctca tctt      594
232 <210> SEQ ID NO: 10
233 <211> LENGTH: 197
234 <212> TYPE: PRT
235 <213> ORGANISM: Coho Salmon
236 <220> FEATURE:
237 <223> OTHER INFORMATION: Xaa= Any Amino Acid
238 <400> SEQUENCE: 10
W--> 239      Leu Ala Leu Cys Ser Val Leu Gly Val Phe Leu Thr Xaa Phe Val Met
240              1              5              10              15
241      Gly Val Phe Ile Arg Phe Arg Asn Thr Pro Ile Val Lys Ala Thr Asn
242              20              25              30
243      Arg Glu Leu Ser Tyr Leu Leu Leu Phe Ser Leu Ile Cys Cys Phe Ser
244              35              40              45
245      Ser Ser Leu Ile Phe Ile Gly Glu Pro Gln Asp Trp Thr Cys Arg Leu
246              50              55              60
247      Arg Gln Pro Ala Phe Gly Ile Ser Phe Val Leu Cys Ile Ser Cys Ile
248              65              70              75              80
249      Leu Val Lys Thr Asn Arg Val Leu Leu Val Phe Glu Ala Lys Ile Pro

```

RAW SEQUENCE LISTING ERROR SUMMARY      DATE: 10/18/2004  
PATENT APPLICATION:    US/10/626,115      TIME: 09:56:49

Input Set : N:\Crf3\RULE60\10626115.raw.txt  
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Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:2; Xaa Pos. 142,172  
Seq#:4; Xaa Pos. 142  
Seq#:6; Xaa Pos. 142  
Seq#:10; Xaa Pos. 13  
Seq#:16; Xaa Pos. 157

## VARIABLE LOCATION SUMMARY

DATE: 10/18/2004

PATENT APPLICATION: US/10/626,115

TIME: 09:56:49

Input Set : N:\Crf3\RULE60\10626115.raw.txt

Output Set: N:\CRF4\10182004\J626115.raw

Use of n's or Xaa's (NEW RULES):

Use of n's and/or Xaa's have been detected in the Sequence Listing.

Use of &lt;220&gt; to &lt;223&gt; is MANDATORY if n's or Xaa's are present.

in &lt;220&gt; to &lt;223&gt; section, please explain location of n or Xaa, and which residue n or Xaa represents.

Seq#:2; Xaa Pos. 142,172

Seq#:4; Xaa Pos. 142

Seq#:6; Xaa Pos. 142

Seq#:10; Xaa Pos. 13

Seq#:16; Xaa Pos. 157



## VERIFICATION SUMMARY

PATENT APPLICATION: US/10/626,115

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Input Set : N:\Crf3\RULE60\10626115.raw.txt

Output Set: N:\CRF4\10182004\J626115.raw

L:57 M:258 W: Mandatory Feature missing, <221> Tag not found for SEQ ID#:2  
L:57 M:258 W: Mandatory Feature missing, <222> Tag not found for SEQ ID#:2  
L:57 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2 after pos.:128  
M:341 Repeated in SeqNo=2  
L:107 M:258 W: Mandatory Feature missing, <221> Tag not found for SEQ ID#:4  
L:107 M:258 W: Mandatory Feature missing, <222> Tag not found for SEQ ID#:4  
L:107 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4 after pos.:128  
L:157 M:258 W: Mandatory Feature missing, <221> Tag not found for SEQ ID#:6  
L:157 M:258 W: Mandatory Feature missing, <222> Tag not found for SEQ ID#:6  
L:157 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6 after pos.:128  
L:239 M:258 W: Mandatory Feature missing, <221> Tag not found for SEQ ID#:10  
L:239 M:258 W: Mandatory Feature missing, <222> Tag not found for SEQ ID#:10  
L:239 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:10 after pos.:0  
L:403 M:258 W: Mandatory Feature missing, <221> Tag not found for SEQ ID#:16  
L:403 M:258 W: Mandatory Feature missing, <222> Tag not found for SEQ ID#:16  
L:403 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:16 after pos.:144